

### Claims

1. A method for determining the biological activity of a compound which can modulate gene transcription, comprising the steps of
  - a) contacting a host with a compound;
  - b) determining the general transcriptional gene response of the host; and
  - c) quantitating the general transcriptional gene response induced by said compound.
2. The method of claim 1, wherein the general transcriptional gene response is determined by a DNA array technology.
3. The method of claim 2, wherein the DNA array technology is an oligonucleotide array technology.
4. The method of claim 1, wherein the compound is a modified protein.
5. The method of claim 4, wherein the modified protein is a pegylated protein.
6. The method of claim 5, wherein the pegylated protein is a specific isolated isoform of a pegylated protein.
7. The method of claims 5, wherein the pegylated protein is Epo or INF.
8. The method of claim 1 wherein the transcriptionally regulated genes are one or more genes selected from the group consisting of Seq ID No. 1 to 29.
9. A method for determining the relative biological activity of a modified compound, comprising comparing the biological activity of the modified compound and the corresponding unmodified compound by the method of claim 1, wherein the relative biological activity of the modified protein is determined by calculating the ratio of the

biological activity of the modified compound and the biological activity of the unmodified compound.

10. The method of claim 9, wherein the modified compound is a chemically or enzymatically modified compound.

11. The method of claim 9, wherein the modified compound is a pegylated protein.

12. A method for identifying compounds that modulate gene transcription comprising determining the biological activity of a first compound which is a known modulator of gene transcription by the method of of claim 1 in the presence or absence of a second compound, wherein a compound which modulates gene transcription is identified if the biological activity of the first compound measured in the presence of said second compound is significantly different from the biological activity of the first compound measured in the absence of said second compound.

13. The method of claim 13 wherein the known modulator of gene transcription is Epo or IFN.